Transition Region Blinkers, X-ray Bright Points and Nanoflares

C.E. Parnell et al.
University of St Andrews, U.K.

Blinkers are small bright emission events observed best in the O V transition region line that occur above the supergranular network. They were first observed using SoHO/CDS data and were identified manually by Harrison (1997). They are believed to be density enhancements, but how they are created and what their properties are is not well known.

We have developed the first program to automatically identify blinkers and their characteristics. The evolution of the magnetic field observed by SoHO/MDI below these blinkers has then be analysed to determine what magnetic field configuration is required for a blinker to occur. Also, the coronal emission above has been investigated using SoHO/CDS and TRACE data to determine the relation between blinkers, x-ray bright points and nanoflares. All three of these events are known to occur at the network, but as yet the relation between them is not understood.

Putting together the results from these multi-wave length studies we have been able to determine a model for how blinkers occur and what their effect is on the transition region around and the corona above.

Co-authors: D. Bewsher/St Andrews, R.A. Harrison/RAL, and A.W. Hood/St Andrews